

Date: Sun, 27 Mar 94 00:08:42 PST
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V94 #333
To: Info-Hams

Info-Hams Digest Sun, 27 Mar 94 Volume 94 : Issue 333

Today's Topics:

 "Live" Boatanchors
 Address Test
 FT-530 RX Performance (2 msgs)
 HAMS and hams
 Hole in car roof: Affect vehicle value? (3 msgs)
 Info-Hams Digest V94 #332
 Noise figure/transistors
 RF and AF speech processors. Was: FT-990 vs TS-850
 UNSUBSCRIBE
 Yaesu 5200 Develops new "Feature"?!

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 27 Mar 94 05:31:03 GMT
From: news-mail-gateway@ucsd.edu
Subject: "Live" Boatanchors
To: info-hams@ucsd.edu

Why dont we all check with our friendly system administrators
or network administrators, find out if IRC (Internet Relay
Chat) is available, if it is, join #ham-radio for real
time "keyboard to keyboard" conversations ??

Date: 27 Mar 94 00:25:58 GMT

From: news-mail-gateway@ucsd.edu
Subject: Address Test
To: info-hams@ucsd.edu

Testing to see if I have the procedure down.
>>KF9DU<<

Date: 26 Mar 94 23:42:20 GMT
From: dog.ee.lbl.gov!agate!kabuki.EECS.Berkeley.EDU!kennish@ucbvax.berkeley.edu
Subject: FT-530 RX Performance
To: info-hams@ucsd.edu

Some measured FT-530 RX performance (in response to discussion about 530 extended RX).

As advertised in the manual, the RX is optimized for ham bands. At 440 MHz, full quieting occurs at -121 dBm, and usable sensitivity extends to -129 dBm, a few dB better than claimed.

Unlike the manual, UHF receive on VHF side is just as good (actually 1dB better on my unit) as RX on UHF side.

Extended RX suffers the further you get out of the ham band. On UHF side, the -100 dBm sensitivity corners are at 325 MHz and 490 MHz. Below 325, it drops off sharply to -89 dBm at 300 MHz. At 500 MHz, it is about -98 dBm.

Extended RX on VHF side is pretty good, with full F3E coverage from 136 to 180 MHz at or better than -100 dBm. A3E coverage is slightly worse (due to no SNR vs. CNR gain for A3) and the -100 dBm sensitivity corner is 125 MHz, dropping off sharply to -85 dBm at 110 MHz.

Hi-UHF is pretty good with at least -100 dBm coverage from 800 to about 920 MHz, dropping off gradually to -80 dBm at 950 MHz.

All this makes sense given the diplexers inside the unit. Pending time and net demand, I will do an extensive measurement of the unit for those that care.

The RX VCO does lock from 110-180 MHz, 300-500 MHz and 800-950 MHz. TX VCO unlocks above ~463 MHz and is inop in 800+. Your mileage may vary. Someone once did post how to RX from about 770 to 800 (who wants this?)

-Ken

Date: 27 Mar 94 01:02:06 GMT
From: agate!ihnp4.ucsd.edu!swrinde!sgiblab!cs.uoregon.edu!reuter.cse.ogi.edu!
netnews.nwnet.net!uofport.edu!hood!peterl@ucbvax.berkeley.edu
Subject: FT-530 RX Performance
To: info-hams@ucsd.edu

=>The RX VCO does lock from 110-180 MHz, 300-500 MHz and 800-950 MHz.
=>TX VCO unlocks above ~463 MHz and is inop in 800+. Your
=>mileage may vary. Someone once did post how to RX from about 770 to
=>800 (who wants this?)

Well, I have the mod, however, exactly which soldier pad is it? It's hard
to tell because the pads aren't all numbered, and are really close.

-Peter Lee, EMT

--

Peter Lee, OR EMT-1
Off-Campus House: 5414 N. Willamette Blvd., Portland, OR 97203

Date: Sat, 26 Mar 1994 18:31:02 GMT
From: ihnp4.ucsd.edu!swrinde!emory!rsiatl!ke4zv!gary@network.ucsd.edu
Subject: HAMS and hams
To: info-hams@ucsd.edu

In article <Cn709y.HLM@news.Hawaii.Edu> jherman@uhunix3.uhcc.Hawaii.Edu (Jeffrey
Herman) writes:

>
>Here's more to worry about: why capitalize
>
>MF, HF, VHF, UHF, CW, AM, FM, SSB, D-layer, E-layer, F1-layer, F2-layer
>(and why no A- B- or C-layers?),

MF through SSB are acronyms. Acronyms supposed to be capitalized. The
layer designators are proper names, so they also are capitalized.

>Any difference in specs between a 2N2222 and a 2N2222A xsistor? (And why
>did I capitalize the N and A?) An xmtr I'm building calls for 2N2222A's
>but all I have are dozens of 2N2222's (from dumpster diving behind
>the Engineering Department's building - amazing what they throw out).
>

>I imagine the 'A' version is the new and improved model.

EIA and EIAJ standards only define capital letters as transistor designators. There is no such thing as a 2n2222. It's an undefined part number. The A suffix in this case means a higher guaranteed breakdown voltage, greater gain, and a guaranteed maximum noise figure spec.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: Sat, 26 Mar 1994 16:07:47 GMT
From: world!mv!ka1dt.mv.com!knight@decwrl.dec.com
Subject: Hole in car roof: Affect vehicle value?
To: info-hams@ucsd.edu

In article <2n079g\$pl1@usenet.rpi.edu> abelson@operators.its.rpi.edu (Mike Abelson) writes:

>value at trade-in/selling time. Their response was that it would lessen the
>value of the vehicle by \$50>0-\$600.

>This seems a bit steep for one hole in the roof

When you sell it, just tell them that the car's prewired for cellular; that'll raise the value back to normal. . . ;-)

fwiw, I've never owned a car that I didn't punch (at least) one hole in the roof.

Dave Knight knight@ka1dt.mv.com (home)
Nashua, NH knight@caboom.zko.dec.com (work)

Date: Sat, 26 Mar 94 17:08:33 -0500
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!noc.near.net!news.delphi.com!
usenet@network.ucsd.edu
Subject: Hole in car roof: Affect vehicle value?
To: info-hams@ucsd.edu

Mike Abelson <abelson@operators.its.rpi.edu> writes:

>Of course, I'll need to make a hole in the roof, so the other day when at my local dealership I asked them what affect that might have on the vehicles value at trade-in/selling time. Their response was that it would lessen the value of the vehicle by \$50

It's probably that an antenna hole in the roof of a car could lead a buyer to think that the car was used in a delivery fleet or some other severe-service application involving radio dispatching.

Date: 26 Mar 94 23:08:40 GMT

From: ihnp4.ucsd.edu!swrinde!cs.utexas.edu!howland.reston.ans.net!noc.near.net!news.delphi.com!BIX.com!hamilton@network.ucsd.edu

Subject: Hole in car roof: Affect vehicle value?

To: info-hams@ucsd.edu

abelson@operators.its.rpi.edu (Mike Abelson) writes:

> I am considering installing a new antenna in my vehicle and roof-mounting it.

> Of course, I'll need to make a hole in the roof, so the other day when at my local dealership I asked them what affect that might have on the vehicles value at trade-in/selling time. Their response was that it would lessen the value of the vehicle by \$500-\$600.

> This seems a bit steep for one hole in the roof (whether it's plugged or the antenna gets ultimately sold along with the vehicle).

> Is this estimate anywhere near accurate? What kind of depreciation (if any) should one really expect when selling/buying a used vehicle which has had a roof-mounted object?

The idea that anyone could say "oh, yes, \$500 or \$600" for one hole right off the top of his head suggests to me there can't be much _in_ his head.

Honestly! Some people must live in a cartoon world for it to be that simple.

Obviously, a decent answer has to be a little more thoughtful. The effect that hole has on resale value must be a function of

(a) the age, value and type of car (a hole in the top of a one-year-old Mercedes 500 strikes as a lot different than one in the top of 6-year-old Jeep Cherokee),

- (b) the cost to repair it (call a local body shop and ask) and
- (c) just how obnoxious the hole is anyway (can you get a little plug to seal it up later?)

Personally, my guess is that unless you're talking about a brand-new, very expensive (snooty) luxury car, no one's even going to notice a plug in the roof so long as there's no other visible damage. And worst case, you could get a body shop to repair it completely invisibly (meaning, you wouldn't even have to tell anyone!) for about \$350.

Regards,

Doug Hamilton hamilton@bix.com Ph 508-358-5715
Hamilton Laboratories, 13 Old Farm Road, Wayland, MA 01778-3117

Date: 26 Mar 94 21:26:21 GMT
From: news-mail-gateway@ucsd.edu
Subject: Info-Hams Digest V94 #332
To: info-hams@ucsd.edu

From: POSTMSTR @SSW
To: HCHOAGLAND @MRGATE
IN%"Info-Hams @UCSD.EDU" @MRGATE @BV8500

Author: IN%"Info-Hams@UCSD.EDU"
Sender: IN%"INFO-HAMS @UCSD.EDU"@MRGATE@BV8500
Subject: Info-Hams Digest V94 #332
Message Class:

Recipients:

Profile Recipient(s):

CCMAIL -RL636614 *RLMEYERING @CCMAIL @BIIVAX

The MAILbridge Server/DEC was unable to deliver mail
from Sender IN%"INFO-HAMS@UCSD.EDU"@MRGATE@BV8500.
Please contact your Soft-Switch E-Mail Administrator to register this user
in the Name Translate Directory.

Date: Sat, 26 Mar 94 19:20:54 GMT
From: btree!hale@network.ucsd.edu
Subject: Noise figure/transistors
To: info-hams@ucsd.edu

In article <Cn96v6.8pD@eskimo.com>, Bill Turner <wrt@eskimo.com> wrote:
>In article <1994Mar25.143716.1@ntuvax.ntu.ac.sg>,

[request for low noise considerations deleted]

>In general, low noise transistors have the most beneficial effect at
>higher frequencies. If your RF amp is working at about 10 MHz or less,
>you probably won't notice much improvement. Above that, a simple test
>is to listen to the noise with the antenna connected, but no signal
>present. Disconnect the antenna and see if the noise drops.

Close, but not quite right. Disconnect the antenna and replace it
with a decent terminating resistor. Then check the amount of noise
being produced by the receiver.

The reason for using a dummy load instead of just disconnecting
the antenna is that some RF amplifiers have a tendency toward
instability when their inputs are not terminated. The instability
can cause the amplifier's noisiness to appear to either increase
or decrease, primarily as a result of changes in gain in the stage.

BTW, turn off the AGC when doing the test if you want reliable
results.

Best regards,

Bob Hale hale@brooktree.com

Date: Sat, 26 Mar 1994 17:48:57 GMT
From: ihnp4.ucsd.edu!library.ucla.edu!europa.eng.gtefsd.com!emory!rsiatl!ke4zv!
gary@network.ucsd.edu
Subject: RF and AF speech processors. Was: FT-990 vs TS-850
To: info-hams@ucsd.edu

In article <Cn8Los.3Ln@srngenprp.sr.hp.com> alanb@sr.hp.com (Alan Bloom) writes:
>Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
>: In article <Cn6ryH.E5w@srngenprp.sr.hp.com> alanb@sr.hp.com (Alan Bloom) writes:
>: >(By eliminating the crystal filter, phasing-type SSB transmitters have
>: >better phase and amplitude flatness than filter-type rigs.)

>
>: Phfffft! The phase flatness through the audio phase shift networks
>: used in amateur phasing SSB rigs was much worse than any phase
>: distortion in a filter rig. The audio phasing network had to cover
>: octaves while the crystal filter only has to work over a tiny fraction
>: of an octave.
>
>Not true. A phasing-type SSB generator specifically depends on a
>90 degree phase difference between the two channels. If the phase
>flatness were bad, you would get terrible unwanted sideband suppression.

No. Phasing exciters depend on **quadrature** at a given frequency to achieve SSB. There must be a net 90 degree difference **at any given frequency**, but the phase at say 300 Hz vis 3000 Hz is irrelevant to the SSB generation, but not to the sound. Ask yourself how many milliseconds is a 90 degree phase delay at 300 Hz, then ask yourself how many at 3000 Hz. Lows are retarded in time relative to highs when passing through the phase shift networks, and that generates the click-boom effect where a complex sound made up of high and low frequency components gets time distorted such that the high frequency impulse arrives before the low frequency component. That's what differential phase distortion is all about.

>Same thing with amplitude flatness. The phase shift network's two
>channels must be matched to within a fraction of a dB to get good sideband
>suppression.

Same thing with amplitude flatness. The amplitude has to match **at a given frequency** but the amplitude response at 300 Hz can be vastly different than at 3000 Hz without affecting SSB generation.

>A typical SSB crystal filter has a couple dB peak-to-peak ripple across
>the passband with similar ripples in the group delay. It is easy to
>do much better than that with a phasing-type exciter.

How much time is a few degrees of phase shift at 9 MHz? How much effect does that have on a 300 Hz waveform? One 9 millionth of a second is a mighty small phase shift at 300 Hz.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: 26 Mar 94 22:46:49 GMT
From: news-mail-gateway@ucsd.edu
Subject: UNSUBSCRIBE
To: info-hams@ucsd.edu

UNSUBSCRIBE

Date: Sat, 26 Mar 1994 21:18:26 GMT
From: ihnp4.ucsd.edu!swrinde!emory!kd4nc!n4tii@network.ucsd.edu
Subject: Yaesu 5200 Develops new "Feature"?!
To: info-hams@ucsd.edu

estey@skyler.mavd.honeywell.com writes:

>My 2-year old Yaesu FT-5200 has recently displayed a new, and unique, feature.
>It turns itself OFF! (Stop the snickering! It happens both in Receive and
>transmit mode!)

>I have vibrated the FT-5200, wiggled the control cable of the separation kit,
>with no direct correlation to the failure. Depressing the ON/OFF switch will
>sometimes not restore normal operation - sometimes the display becomes real
>dim when I try to turn the power back on - and repeated attempts don't always
>work. Failures have happened when the unit is ice-cold - and when the unit is
>warm so thermal problems seem unlikely. I fear sending the unit in as I
>am not absolutely sure the problem isn't with the cable running between the
>main unit under the seat and the control head on the dash.

>Has anyone experienced this new Yaesu feature???

Hi Carl....

I don't know if this will help you or not...I own a Yeasu FT-212. And I had a
similar problem...I'd be driving down the road and it just turns off!

Check your power cable...replace the fuses.... I had a fuse that at first
appearance looked good, but in fact was intermittantly bad!

John

>Carl

>_

>Carl Estey | Home Mail Address: 276 Walnut Lane
>Amateur Callsign: WA0CQG | Apple Valley, MN 55124
> | Business Address: Honeywell Inc.
>Phone: Work (612) 954-7630 | Flight Systems & Test Operations M/S MN15-2370

> FAX (612) 954-7495 | 1625 Zarthan Ave. S., St. Louis Park, MN 55416
> Home (612) 432-0699 | Packet: WA0CQG @ WA0CQG.#MSP.MN.USA.NA
>The nonsense here is of my own making - no one else would want credit!

--

John Reed - Gainesville, GA
N4TII -- AFA2FH -- Redstar 204
HAM MARS C. A. P.

Date: 26 Mar 1994 21:47:19 GMT
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!wupost!bigfoot.wustl.edu!cec3!
j1w3@network.ucsd.edu
To: info-hams@ucsd.edu

References <2mfo8e\$c69@gerald.cc.utexas.edu>, <Cn709y.HLM@news.Hawaii.Edu>,
<1994Mar26.183102.6425@ke4zv.atl.ga.us>
Subject : Re: HAMS and hams

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
: EIA and EIAJ standards only define capital letters as transistor designators.
: There is no such thing as a 2n2222. It's an undefined part number. The A
: suffix in this case means a higher guaranteed breakdown voltage, greater
: gain, and a guaranteed maximum noise figure spec.

Even so, it's interesting that program like Mentor Graphics has it's
semiconductors designated as "2n2222." At least the latest version that
operates on the Sparc10. . .

-jesse

Date: Sat, 26 Mar 1994 18:07:34 GMT
From: ihnp4.ucsd.edu!swrinde!emory!rsiatl!ke4zv!gary@network.ucsd.edu
To: info-hams@ucsd.edu

References <bote.764487800@access3>, <VBREAULT.94Mar25134216@rinhp750.gmr.com>,
<Cn8ttu.AHI@news.Hawaii.Edu>
Reply-To : gary@ke4zv.atl.ga.us (Gary Coffman)
Subject : Re: Voice mail on a repeater?

In article <Cn8ttu.AHI@news.Hawaii.Edu> jherman@uhunix3.uhcc.Hawaii.Edu (Jeffrey
Herman) writes:

>Are there any repeaters left in this country that just repeat, including
>no musical tones or beeps when you drop your carrier? I miss the old
>days when all one heard was a nice solid kurchunk of the repeater

>receiver's squelch tail quickly followed by a second squelch tail from
>my receiver (the repeater carrier would drop off after 1-2 seconds).
>This seemed to be the way most of the public safety repeaters were
>also set up (particular the California Division of Forestry
>repeaters back when I was a fireman in the early 70s).
>
>Gary: I'll be disappointed if your repeater beeps.

Sorry, you're disappointed. It does "roger beep" to signal user
carrier drop and timer reset. We run near zero tail so remote base
operators aren't locked out. We tried it without the beep, but users
complained they couldn't get in the machine. They couldn't hear their
kerchunk because their receivers weren't recovering fast enough. The
beep gives them 300 ms to recover. Users with noiseless squelch radios
never knew when the repeater dropped without the beep.

Gary

--
Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary
534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | |

Date: Sat, 26 Mar 1994 18:39:33 GMT
From: ihnp4.ucsd.edu!swrinde!gatech!news-feed-1.peachnet.edu!emory!rsiatl!ke4zv!
gary@network.ucsd.edu
To: info-hams@ucsd.edu

References <1994Mar23.162557.7558@arrl.org>,
<1994Mar24.030016.23680@ke4zv.atl.ga.us>, <1994Mar24.200811.11578@arrl.org>
Reply-To : gary@ke4zv.atl.ga.us (Gary Coffman)
Subject : Re: RF and AF speech processors. Was: FT-990 vs TS-850

In article <1994Mar24.200811.11578@arrl.org> zlau@arrl.org (Zack Lau (KH6CP))
writes:

>
>So why don't these broadcast engineers just use RF
>modulator/clipper/demodulators? :-). There were probably
>others, but even QST published "Audio Processor Using
>RF Clipping" back in February, 1981. The author generated
>a SSB signal using the phasing method and demodulated it
>after clipping.

Most commercial processors do work somewhat that way. We don't
like clippers because they generate their own problems. We
do a softer compression rather than a hard clip. We also have

to worry about stereo imaging and maintaining a wide flat bandwidth.
The way to do that well still requires multi-band processing, even if
it's done partially at RF.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: Sat, 26 Mar 1994 20:11:56 GMT
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!pipex!sunic!psinntp!psinntp!
arrl.org!zlau@network.ucsd.edu
To: info-hams@ucsd.edu

References <2mnpu0\$9ff@vixen.cso.uiuc.edu>, <Cn6ryH.E5w@srngenprp.sr.hp.com>,
<1994Mar25.155240.899@ke4zv.atl.ga.us>
Subject : Re: RF and AF speech processors. Was: FT-990 vs TS-850

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

: Phffft! The phase flatness through the audio phase shift networks
: used in amateur phasing SSB rigs was much worse than any phase
: distortion in a filter rig. The audio phasing network had to cover
: octaves while the crystal filter only has to work over a tiny fraction
: of an octave.

This is *wrong*

SSB crystal filters are designed for steep skirts for good
shape factors. This means that without any equalizing networks
(which normally double the complexity and send the cost through
the roof), the phase response at the passband edges are *terrible*
The fact that the center frequency of the crystal filter is much
higher just means that the Q of the parts has to be that much
better. The mathematics of the phase and amplitude response
tradeoffs are unchanged-- the tradeoffs are identical for a
3 kHz audio filter and a 3 kHz SSB filter (assuming ideal
parts--with real parts its easier at audio...)

This is why people have trouble sending data through crystal
filters--they are optimized for SSB and have too much phase
distortion. True, it is possible to make Bessel or Gaussian
response crystal filters, but you won't find them in mass market
amateur SSB rigs.

--

Zack Lau KH6CP/1 2 way QRP WAS
 8 States on 10 GHz
Internet: zlau@arrl.org 10 grids on 2304 MHz

End of Info-Hams Digest V94 #333
